



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

CASWELL FILE
334 B

PC 108102

SEP 8 1983

OPP OFFICIAL RECORD
HEALTH EFFECTS DIVISION
SCIENTIFIC DATA REVIEWS
EPA SERIES 361

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: PP#9G2200/FAP#9H5217. Pirimiphos-methyl
on stored grains (corn, wheat, rice,
grain sorghum). Amendment of 8/22/83.

FROM: Nancy Dodd, Chemist *Nancy Dodd*
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

THRU: Charles L. Trichilo, Chief *R.D. Schmitt*
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

TO: Jay Ellenberger, P.M. No. 12
Insecticide-Rodenticide Branch
Registration Division (TS-767)

and

Toxicology Branch
Hazard Evaluation Division (TS-769)

I.C.I. Americas, Inc. submits analytical method validation data which was requested in the 7/29/83 review of PP#9G2200/FAP#9H5217. It was determined in that review that the following are required for a favorable response:

Deficiency #1:

Validation data (control and recovery values) for parent and 0-2-ethylamino-6-methyl-pyrimidin-4-yl 0,0-dimethyl phosphorothioate in corn, rice, grain sorghum, and wheat.

Petitioner's response to deficiency #1:

The petitioner submits analytical method validation data (control and recovery) for pirimiphos-methyl and its des-ethyl metabolite (0-2-ethylamino-6-methyl-pyrimidin-4-yl 0,0-dimethyl phosphorothioate) on corn, rice, wheat, and grain sorghum using method PPRAM II. Control samples of corn, rice, wheat, and sorghum grains contained no detectable levels (<0.01 ppm phosphorothioate-containing compounds) of pirimiphos-methyl and the des-ethyl phosphorothioate metabolite. Recoveries of pirimiphos-methyl at fortification levels of 0.1-10 ppm were 80-123% in wheat, 82-110% in sorghum grain, 82-100% in rice, and 80-130% in corn. Recoveries of the des-ethyl metabolite at fortification levels of 0.05-1.0 ppm were 60-91% in wheat, 90-132% in sorghum grain, 66-110% in rice, and 71-122% in corn.

Conclusion #1:

Deficiency #1 is resolved.

Deficiency #2:

Either suitable analytical methods for the conjugates of the hydroxypyrimidine metabolites (Compounds IV, V and VI) in grains or data showing that the available method for these metabolites determines conjugates.

Petitioners response to deficiency #2:

The petitioner has modified the analytical method (PPRAM No. 11, with modifications to PPRAM of 8/82) for analysis of the hydroxypyrimidine metabolites on stored grains to allow determination of both free and conjugated hydroxypyrimidines. An aqueous acid hydrolysis step has been added. This step involves dissolving the extract in 2M hydrochloric acid and heating under reflux for 2 hours. As a result of the change, a more selective determination step is used. Gas chromatography - mass spectrometry (GCMS) with selected ion monitoring is used instead of gas chromatography with a nitrogen selective detector. Control samples of corn, rice, wheat, and sorghum grains contained no detectable levels (<0.1 ppm) of hydroxypyrimidine metabolites. Recoveries of 2-diethylamino-6-methylpyrimidine-4-ol (Compound IV) at fortification levels of 0.2-2.0 ppm were 83-93% in corn, 85-122% in wheat, 82-104% in rice, and 92-128% in sorghum. Recoveries of 2-ethylamino-6-methylpyrimidin-4-ol (Compound V) at fortification levels of 0.2-2.0 ppm were 66-97% in corn, 78-105% in wheat, 62-89% in rice, and 57-77% in grain sorghum. Recoveries of 2-amino-6-methylpyrimidin-4-ol (Compound VI) were 58-91% in corn, 88-90% in wheat, 55-86% in rice, and 56-66% in grain sorghum.

Conclusion #2:

Deficiency #2 is resolved.

Conclusions and Recommendations

1. Adequate analytical methodology is available to enforce the proposed tolerances for stored grains.
2. As the lack of suitable methodology for stored grains was the only deficiency, we recommend that the proposed tolerances be established.

TS-769:RCB:N.Dodd:mch:CM#2:Rm810:9/6/83:X7324

cc: R.F., Circu., N. Dodd, Thompson, FDA, TOX, EEB, EAB,
PP#9G2200/FAP#9H5217

RDI: R. Hummel, 9/6/82; R. Schmitt, 9/6/83



13544

014768

Chemical: Pirimiphos-methyl (ANSI)

PC Code: 108102

HED File Code 11000 Chemistry Reviews

Memo Date: 09/08/83

File ID: 00000000

Accession Number: 412-03-0015

HED Records Reference Center
09/23/2002

